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resembling the swathing band, and is doubtless spun from the small spinning tubes.

The silk of this spider, as also the structure of its web, can be studied conveniently by taking a large pane of glass and passing it behind the web. By moving the glass forward and snipping off the threads with scissors, the web is transferred to the glass. This makes a suitable mount for the naked eye and microscopic study.

A word should be said about the venom of spiders. All spiders secrete poison, but only very few spiders are dangerous. I have collected hundreds of specimens of spiders, but have never been bitten. In fact, no spider even attempted to inject its venom. It is the opinion of such authorities as Comstock that in the North there is no spider to be feared while in the South there is a single easily recognized species "that is believed by some people to be dangerous." Certainly no one can justify his antipathy to the study of araneology on the ground that spiders are venomous and dangerous.

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NEW FORMS OF CALAMITES

BY N. M. GRIER

The specimens upon which this work is based were collected by Mr. Caspar Reel and myself at Reel's Stone Quarry, East Bellevue, Pa., from the sandstone above the Elk Lick Coal. They were exhibited and discussed before the Academy of Science of St. Louis, Jan. 11, 1915, and are deposited in the collection of the Academy.

EUCALAMITES.

Group of *Calamites cruciatus* Sternb.

Calamites cruciatus harrisoni, n. sp.

Pl. I., figs. 1. 2.

Internodes 23-28 mm. in length, broader than long. Articulations well marked by nodal swellings. Ribs well defined, 2-3 to 3-4 mm. in breadth, equal, half round; not alternating and generally somewhat inflated at the articulations. Furrows generally 1-3 the width of the ribs. Branch scars at least 7 to the node, 8-9 mm. in diameter, showing *the central insertion point, 15 mm. apart on the nodal line, alternating on the neighboring nodes, with 12-16 ribs converging on each side to them. Leaf scars, if any, indistinct.*

The type specimen, consisting of a cast of the medullary cavity, has been subjected to flattening influences, resulting in a splitting of the stem length-wise. It is composed of 3 nodes in a fair state of preservation, the upper two 28 mm. in length while the lower is 23 mm., their circumferences being 13, 12 1-2, and 12 cm. respectively. A portion of it is covered with a thick and somewhat coaly bark of about 4 mm. thickness at some places, and upon which the furrows appear but indistinctly. The combined thickness of the bark and medullary cavity is from 80-83 mm. at the upper (?) end, while the lower (?) end has a diameter of 41 mm.

Following the nomenclature as proposed by Jongmans[1], this specimen evidently is a member of the *cruciatus* group. With 7 branch scars it would tend to approximate the *Calamites cruciatus septenarius* of Sterzel. The following distinguishing features appear. Of the two more clearly distinguished varieties of this latter form, the variety *fascialus* of Sterzel is excluded by the shortness of its joints, the presence of leaf traces, and the minimum number of ribs converging to form the branch scars.

The rather incompletely described variety *Brongniarti* of Sternburg is eliminated through the possession of leaf scars, absence of swellings at the nodes, and the want of distinct impressions of the ribs.

In short, the number of estimated branch scars, the number of ribs converging to meet these, their width and distance from one another, considered with the length, diameter and circumference of the joints widely separate this form from any hitherto described as belonging to this group, making it clear that we are dealing with a new species which I have dedicated to Prof. R. G. Harrison of Yale University, an inspiring worker in taxonomic fields.

Calamites multifoliatus n. sp.

Pl. II., figs. 1. 2

Internodes 36-38 cm. in length, broader than long. Articulations somewhat constricted, increasing in size from the base (?) of the stem. Ribs at least 4 times the width of the furrows, well defined, half-round, pointed at the ends, terminating in leaf scars at the nodes, or converging in group of 2-4 to the nodal line.. Apparently two branch scars to the *whorl, opposite in position, to which 8-12 ribs converge. Numerous leaves.*

The type specimen, a cast of the medullary cavity consists of one almost perfect node, and well preserved portions of two others. While also subjected to a flattening process, it has not split. The one measurable node has a diameter of 16 1-2 cm. A break in the wall of the cast shows the imprint of the cavity wall on the core-like matrix.

It became clear that of all previous species described, the specimen resembled most closely the *Calamites ramosus* of Artis. Of the three figures of this species given by Jongmans, those from Artis and Stamm bear hardly a superficial resemblance, while that of Weiss, although approximating, gives indications of somewhat different characters.

The internodes of the older part of the stem are not slender, and are hardly longer than wide. The ribs so far as this particular specimen is concerned, are devoid of tubercles, they are not bluntly pointed as in *ramosus,* and average 1 1-3 mm. in width, the furrows 1-3 mm. They apparently never alternate, and continue from node to node, a character not to be observed in the figure of Weiss. No trace of any microscopical striation is to be found here, and the average number of ribs to the cm. is only about 1-3 as great. There is no well defined "corona" surrounding the insertion point of the branch scar, and these are much smaller. It will be observed that the stem (?) begins in a fashion never found in *ramosus* according to Weiss and Zeiller, and resembling that found in *Suckowi.* Still another distinguishing point is the comparatively small number of ribs taking part in the formation of each branch scar.

Calamites Fettermanni n. sp.

Pl. III., figs. 1. 2.

Stem only moderately slender, articulations well set off by nodal swellings. Joints at least 3 times as long as wide. Ribs pointed, 2 mm. in breadth, not alternating, distinct, flat or rounded, longitudinally striated, when flattened giving the furrows a doubly striated appearance. Furrows 1-3 to 1-2 mm. in breadth. Tubercles present but mostly indistinct. Branch scars alternating probably 6 to the whorl, insertion points 2-3 mm. in width. Leaves apparently absent.

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[1] Jongmans W. J., "Anleitung zur Bestimmung der Karbon pflanzen West Europas." Bd. I (1913), from whose descriptions also, the greater part of the comparisons have been made.

The type, a cast of the medullary cavity, has become broken into 3 pieces, which when joined give evidence of this species striking peculiarity' the great length of the internodes. The ribs, in greater number run straight into the branch scar, with apparently no great tendency to converge. No trace of a bark is present. This form is respectfully dedicated to J. C. Pettermann, Professor of Biology, University of Pittsburgh.

Pl. I.

Fig. 1. Calamites cruciatus Harrisoni, n. sp. x 1.
Fig. 2. The same, a branch scar x 2 1-2

Pl. II.

Fig. 1. Calamites multifoliatus n. sp. x 1.
Fig. 2. The same, x 2 leaves and ribs slightly magnified to show their arrangement.

Pl. III.

Fig. 1. Calamites Fettermanni n. sp. x 7-11
Fig. 2. The same, a branch scar x 3

Central High School,
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OUR WINTER BIRDS.

BY BROTHER ALPHONSUS, C. S. C.

(CONCLUSION.)

RED-HEADED WOODPECKER
Melanerpes erythrocephalus

This woodpecker is not a regular winter species, and was found by the writer for two seasons—1913–1914 and 1914–1915—in twelve years of observation.. Manuals of ornithology state that the abundance of food suitable for this species will cause it to stay during the winter. But if that be true, why was this food not found but twice in twelve winters, although these were both consecutive seasons? I cannot believe that such was the case, and therefore I do not think that the problem of the birds' presence can be solved by the food question. Of course the species was not present in large numbers, never more than a few individuals were seen; and this fact might point to a solution of the problem. Individuals of other species; such as, the Meadowlark, Robin, Bronzed Grackle, may be seen by careful observers in winter; and if this is so, why

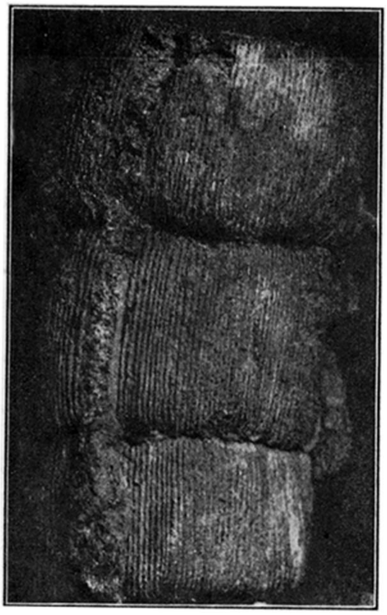

Fig. 1

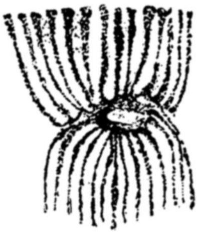

Fig. 2

PLATE I. GRIER ON NEW FORMS OF CALAMITES

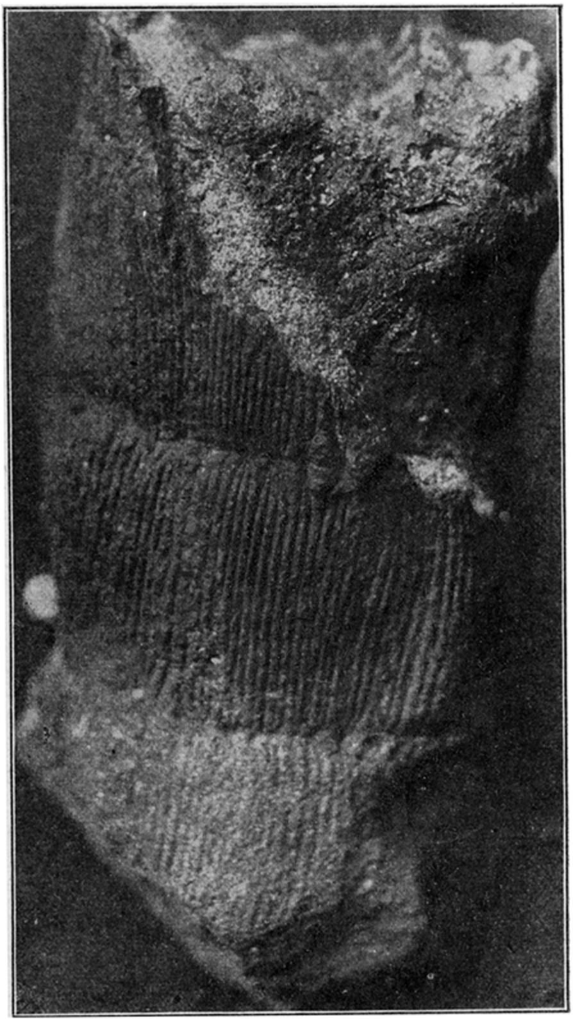

Fig. 1

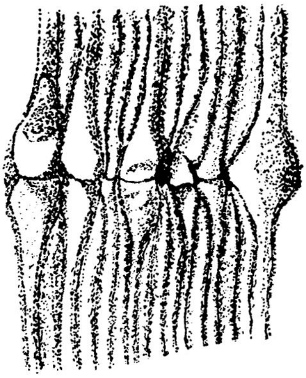

Fig. 2

PLATE II. GRIER ON NEW FORMS OF CALAMITES

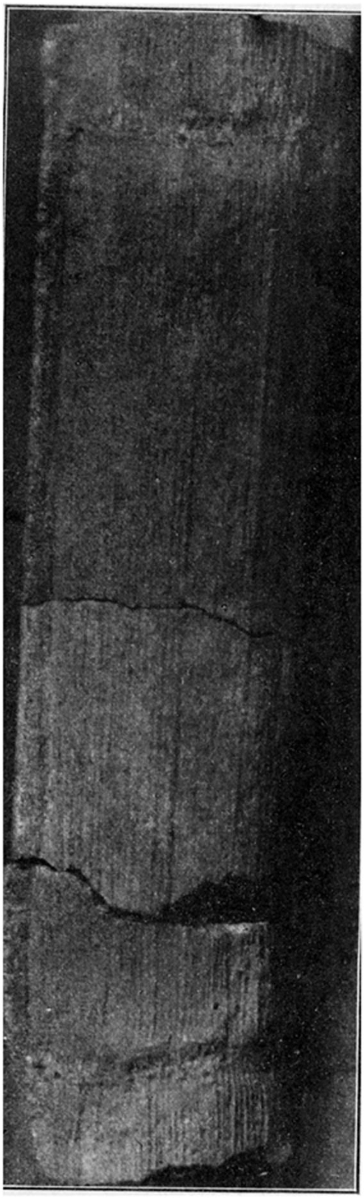

Fig. 1.

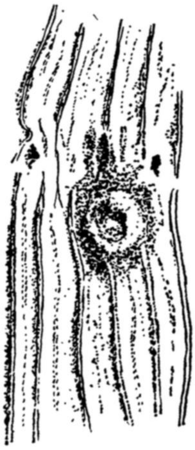

Fig. 2.

PLATE III. GRIER ON NEW FORMS OF CALAMITES